



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,095	02/02/2004	Francois Houde	12214-3US	5766

128 7590 12/21/2006
HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER

BANKHEAD, GENE LOUIS

ART UNIT	PAPER NUMBER
----------	--------------

3744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

88

Office Action Summary	Application No.	Applicant(s)	
	10/768,095	HOUDE, FRANCOIS	
	Examiner	Art Unit	
	Gene L. Bankhead	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Febrary 02 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/02/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/02/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 11-14, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aston (US 3581062) in view of E.H. Evalds (US 3416060).

Regarding claims 1 and 12, Aston discloses a room thermostat encompassing a circuit board, with at least one thyristor as a part of a bridge circuit mounted to the board, with a primary casing (the housing of Figure 1 below) that defines a chamber housing for the circuit board, (see Figure 1 and column 1, lines 68-71). Aston fails to teach the thyristor and bridge circuit comprises an electric relay. Evalds teaches a bridge circuit with a thyristor that controls the operation of an electric relay (column 3 lines 1-4 and lines 15-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bridge circuit of Aston with the bridge circuit of Evalds to advantageously provide a charge of electric current to the electric switch. Aston further teaches the electromechanical switch is housed in a secondary casing within the primary casing, (column 1 lines 52-60 and Figure 1 below). The electromechanical switch encompasses a "gate controlled rectifier device, such as a thyristor or a silicon controlled rectifier", (column 1 lines 70-75).

In regard to claim 2, the electric relay '062 includes a switch means (column 1, lines 68-71). Aston further discloses a secondary casing housing the electric relay, the secondary casing being embedded in the insulation material within the primary casing (column 1 lines 52-60).

The chamber of Aston is filled with an insulation material capable of depressing any sound made by the electric relay. See Figure 1.

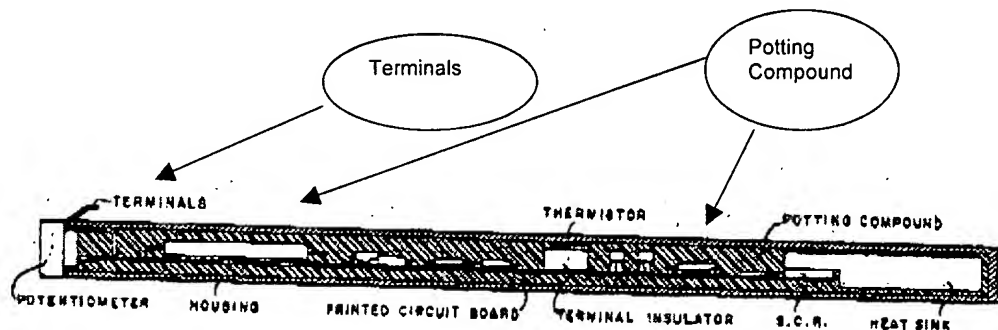


Figure 1 (Aston)

Regarding claims 3 and 4 Aston teaches a potting compound used as the insulation material is a potting compound, Figure 1. Aston discloses that the insulation material encompasses epoxy and urethane compounds, (column 1, lines 60-67).

With regard to claim 5, the potting compound clearly spans the entire surface of the circuit board. The electric relay is substantially surrounded on all sides by the insulation material (see Figure 1).

Regarding claim 11 Aston further teaches an acoustically electric unit with at least one electromechanical switch (column 1, lines 68-71), surrounded by casing, (see Figure 1). Aston further discloses that the electromechanical switch is completely bedded in the insulation material (column 1 lines 30-35).

Art Unit: 3744

In reference to claims 13 and 14, Aston teaches an insulating material that is a potting compound (see Figure 2 below); encompassing epoxy and urethane compounds (column 1 lines 60-67).

Regarding claim 19, Aston discloses an electric unit that is a baseboard relay. Note the electronic circuit is mounted directly on the printed circuit board.

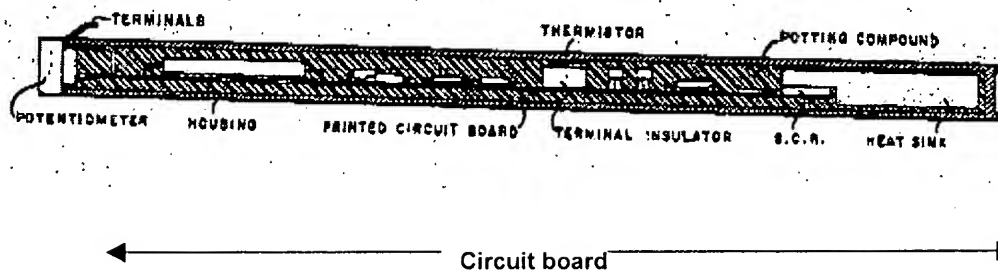


Figure 2 (Aston)

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aston in view of Evalds in further view of Horman (US 3059076).

With regard to claims 20 and 21 Aston in view of Evalds discloses an electronic switch device with electric relay, as stated in the rejection of claim 1, disposed in a casing (see Figure 2 and column 1 lines 70-75), the casing is filled with potting compound (see Figure 2 above), and the electromechanical switch is enclosed in a secondary switch casing, (column 1 lines 52-60). The switch casing is enclosed in the primary casing, the housing of Figure 2. Aston in view of Evalds fails to teach the electromechanical switch comprises an electromagnet and armature. Horman teaches in the art of electromechanical switches with electric relays it is conventional to use electromagnets and armatures (column 1

Art Unit: 3744

lines 25-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Aston and Ewalds with Horman as the armature provides additional support to the potting compound to ensure the switch is capable of withstanding additional forces due to shock and vibration against the electromechanical switch. Further the thermostat of Aston meets all structural limitations of claims 20 and 21; thus it is inherent that the methods of claims 20 and 21 are capable of being used to dampen the click sound produced by the electromechanical switch.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aston in view of Evalds in further view of Noba (US 3944774). Aston, as modified by Evalds, teach all limitations of claim 1, however fail to teach a vent in the thermostat wherein ionized air is provided for the electric relay. Noba discloses an electric relay with a casing 1, and a vent 12 capable of venting ionized air produced during the relays operation, see Figure 3 below. Noba teaches it is advantageous to be able to conduct air into and from a casing surrounded by insulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the thermostat electric relay of Aston, as modified by Evalds, with a vent in view of Noba in order to prevent overheating of the relay.

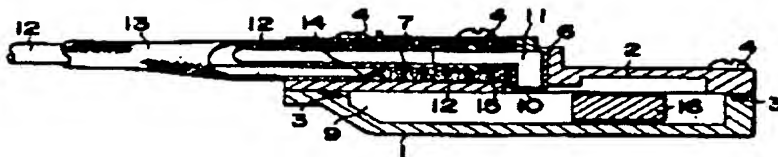


Figure 3 (Noba)

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aston in view of Evalds and Nesbitt (US 6347747) in further view of Noba and Moyer et. al (US 3421131), as applied to claim 6 above.

With regard to claim 7 Aston in view of Evalds in further view of Noba teach all limitations of claim 6, however fail to teach a male projection received in a corresponding female part to extend axially through a primary casing with a pathway for air from the electric relay to flow. Moyer discloses a thermostat assembly wherein a male projection 20 is received in a corresponding female part 18, with a gasket about the male projection 26 to tighten the base plate 18 and cover 72, see Figures 1 and 2 below. Claim 10 differs from Aston in calling for a primary casing with at least one opening for pouring insulation material into the chamber of the thermostat. Nesbitt teaches a casing 1, see Figure 4 below, with vents capable of venting ionized air from the electric relay, and for pouring insulation material into the chamber of the thermostat. Nesbitt teaches it is advantageous for air to flow directly across the temperature sensor surface of thermostat. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aston with Nesbitt, Moyer and Noba in order for the outside ambient air temperature to be detected with greater

Art Unit: 3744

precision and speed, and to ensure a more rigid connection between the circuit board and base plate, firmly securing the electronic components in the event of mechanical damage to the thermostat.

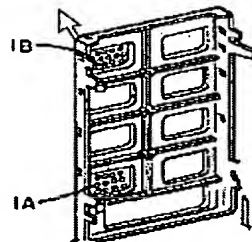
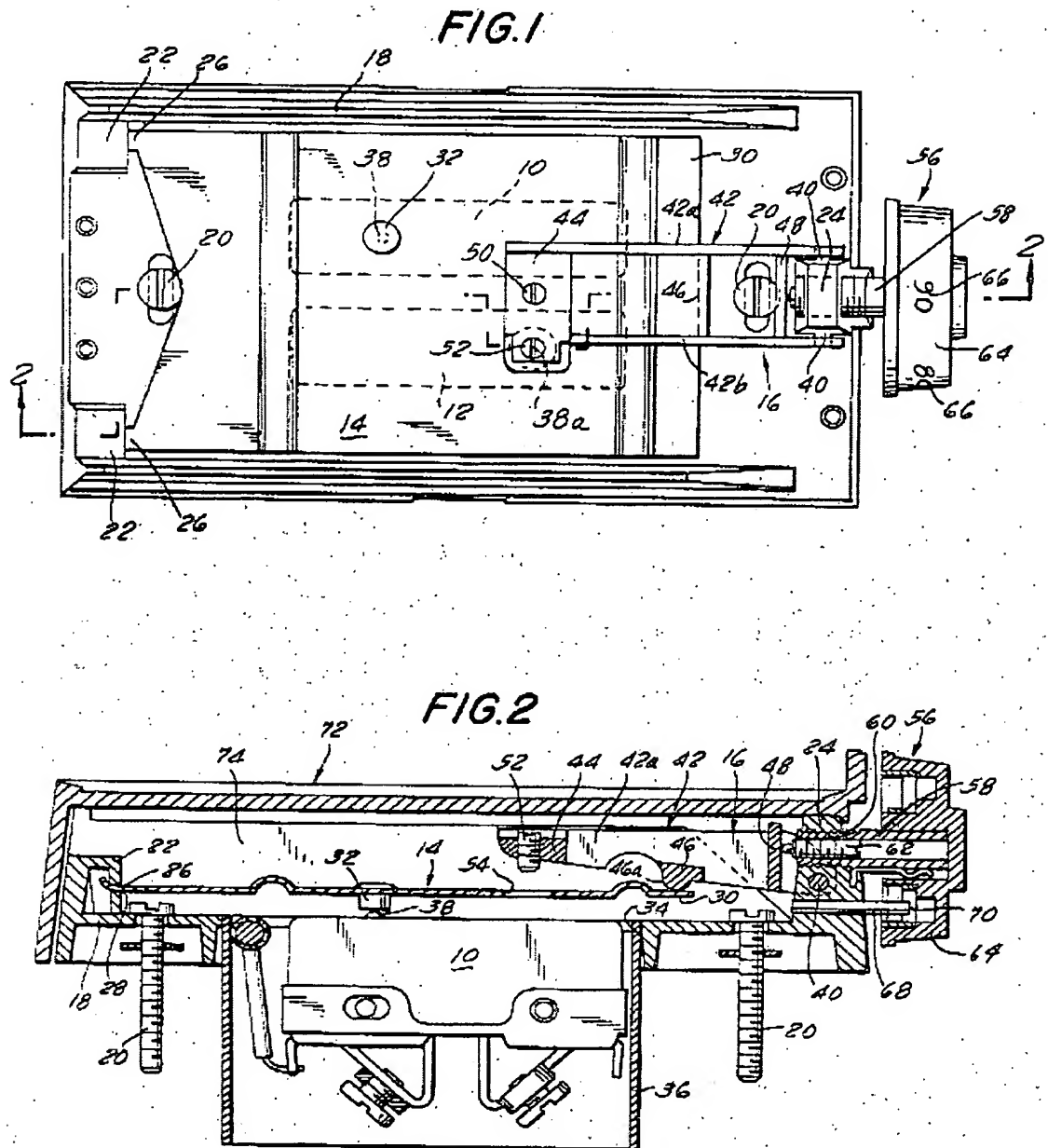


Figure 4 (Nesbitt)



Figures 1 and 2 (Moyer)

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aston in view of Noba. Aston discloses all limitations of claim 11. However he does not disclose a vent for the second casing housing the electric relay. Noba

Art Unit: 3744

discloses an electric relay with a casing 1, and a vent 12 capable of venting ionized air produced during the relays operation, see Figure 3 above. Noba teaches it is advantageous to be able to conduct air into and from a casing surrounded by insulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the thermostat electric relay of Aston with a vent in view of Noba in order to prevent overheating of the relay.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aston in view of Nesbitt. Aston discloses all limitations of claim 11. However, he does not disclose an opening in the primary casing for pouring sound insulation material into the chamber of the thermostat. Nesbitt teaches a casing 1, see Figure 4 above, with vents for pouring insulation material into the chamber of the thermostat. Nesbitt teaches it is advantageous for air to flow directly across the temperature sensor surface of thermostat. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thermostat of Aston with casing of Nesbitt in order for ambient air to directly reach the thermostat temperature sensors more quickly, and thus enable outside ambient air temperature to be detected with greater precision and speed

Allowable Subject Matter

Claims 16, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments, see amendment, filed 9/22/06, with respect to the rejection(s) of claim(s) 1-21 under 35 U.S.C § 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Aston (US 3581062), Evalds (US 3416060), Noba (3944774), Nesbitt (US 6347747) and Moyer (US 3421131).

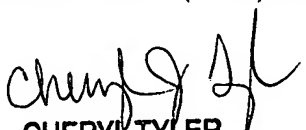
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gene L. Bankhead whose telephone number is (571)-272-8963. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHERYL TYLER
SUPERVISORY PATENT EXAMINER

GB
Examiner
Art Unit 3744